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AGRICULTURAL RESEARCH SERVICE
WASHINGTON D.C. 20250

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UNITED STATES DEPARTMENT OF INTERIOR
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UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
WASHINGTON D.C. 20013

NOTICE OF RELEASE OF FISH CREEK BOTTLEBRUSH SQUIRRELTAIL
SELECTED GERMPLASM

Fish Creek Germplasm of bottlebrush squirreltail (*Elymus elymoides* [Raf.] Swezey ssp. *elymoides*) is proposed for release. This selected class (natural track) of pre-cultivar germplasm is eligible for seed certification under guidelines developed by the Association of Seed Certifying Agencies (2001). Participating in the release are the USDA-ARS, Utah Agricultural Experiment Station, the USDI-Bureau of Land Management, and the USDA-Natural Resources Conservation Service. This alternative release procedure is being utilized because existing commercial sources of bottlebrush squirreltail are inadequate, propagation material of specific ecotypes is needed for ecosystem restoration, potential for immediate use is high, and commercial potential beyond specific restoration and reclamation objectives is probably limited (Young, 1995). The great degree of genetic variation within and between *E. elymoides* subspecies for ecophysiological traits (Jones et al., in review) is probably related to the self-pollinating nature of this grass (Jensen et al., 1990).

Fish Creek keys to *Sitanion hystrix* (Nutt.) J.G. Smith var. *hystrix*, one of three bottlebrush squirreltail taxa in Wilson's (1963) treatment, while the Sand Hollow germplasm (Jones et al., 1998) keys to *S. jubatum* J.G. Smith (= *E. multisetus* [J.G. Smith] M.E. Jones), i.e., big squirreltail (Barkworth et al., 1983; Barkworth, 1997). Recent molecular AFLP data have verified that big squirreltail and bottlebrush squirreltail are indeed distinct species (Larson et al., in prep.).

Fish Creek was collected by T.A. Jones as accession T-1223 in Blaine County, ID, 9.8 km northeast of the junction of highways 26 and 20 (Carey, ID) on August 3, 1995. No intentional selection has been practiced on this accession. Coordinates of the collection site are 43°20'36"N 113°51'48" W. Associated species were the natives big sagebrush (*Artemisia tridentata* Nutt.) and sandberg bluegrass (*Poa secunda* Presl.), the cultivated introduction crested wheatgrass (*Agropyron desertorum* [Fisch. ex Link] Schult.), and introduced weeds downy brome (*Bromus tectorum* L.), rattlesnake broom (*B. brizaeformis* Fisch. & Meyer), bulbous bluegrass (*Poa bulbosa* L.), and tumble mustard (*Sisymbrium altissimum* L). The site is classified by USDA-NRCS (Anonymous, 1981) as Major Land Resource Area B10 (Upper Snake River Lava Plains and Hills), Estimated average annual precipitation at the site is 380 mm based on extrapolation from official weather stations at Picabo (20.00 km to the southwest) and Craters of the Moon National Monument (23.75 km to the northeast). Elevation is about 1450 m. Fish Creek's intended area of use is the upper Snake River Plain.

Removal of the awn without seed damage has been difficult in Sand Hollow big squirreltail germplasm. Mass of the proximal centimeter of the awn for Fish Creek was 0.272 mg at Evans Farm in 2001, 33% lower than Sand Hollow. The spike of Fish Creek disarticulates in a determinate fashion at the base, unlike most *E. elymoides* ssp. *elymoides* accessions that disarticulate indeterminately at each rachis internode. Determinate disarticulation is preferred for seed harvest because intact spikes may remain trapped within the crop canopy rather than settling to the ground.

Fish Creek has been compared with other accessions keying to *E. elymoides* ssp. *elymoides* from Idaho (6 accessions in greenhouse/8 in field), Utah (1 in both), Colorado (1 in both), and Wyoming (2 in both) along with ssp. *brevifolius* and *E. multisetus* accessions (Jones et al., in review). Fish Creek had the fastest establishment in the greenhouse trial (10 accessions) and the latest heading date, the second-greatest plant height, and the fourth-highest seed mass in the field trial (12 accessions).

Fish Creek G-1 seed harvested from this field trial was used to establish a seed-increase block in the spring of 1998 at Evans Farm from which G-2 seed was harvested beginning in 1999. Seed of the G-2 generation will be maintained by the USDA-ARS Forage and Range Research Laboratory, Logan, UT and will be made available to growers for production of G-3 to G-5 seed by the Utah Crop Improvement Association. Seed through the G-5 generation will be eligible for certification.

Seed of Fish Creek germplasm will be donated to the National Plant Germplasm System. Small quantities of seed can be obtained for research purposes by contacting David Stout, Western Regional Plant Introduction Station, Washington State University, Pullman, WA 99164-6402. Appropriate recognition should be made if this material contributes to the development of a new breeding line or cultivar.

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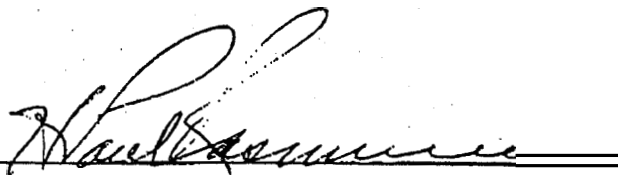
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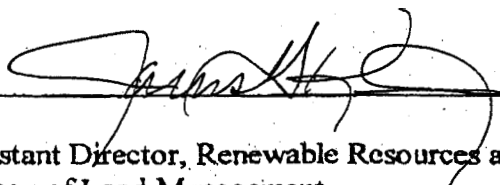
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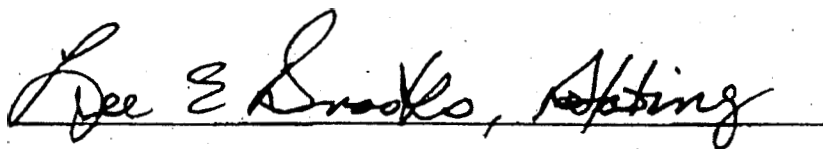
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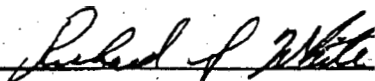
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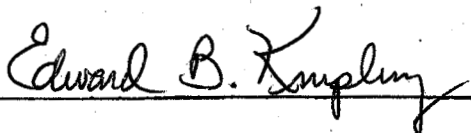
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